develop INSIDER

How the world's leading games studios are creating visionary visuals

In association with Autodesk®

Introduction

As developers across the world know – as well as our own in-house teams devising our 3D rendering products – the games industry is fast changing.

We have been paying close attention to all emerging trends impacting our global business in an effort to ensure that our tools not only fulfil developers' current needs but are ready to address upcoming ones, as well.

Autodesk works in close collaboration with studios all over the planet. We plan new features as far as three years out as the quest for ways to create new, innovative and striking artwork continues.

Our 3D modelling, animation and rendering products 3ds Max, Maya, MotionBuilder and HumanIK are key to many of the companies developing games – but while we pride ourself on the quality of our software, it wouldn't mean anything without the exemplary work produced by studios using it.

In this special guide created in conjunction with *Develop* magazine we've taken a tour of the studios at four of our key clients – Epic Games, Midway, Blitz Games and Electronic Arts – to show how our products and close collaboration are boosting productivity and helping games studios deliver state-of-the-art, visionary visuals.

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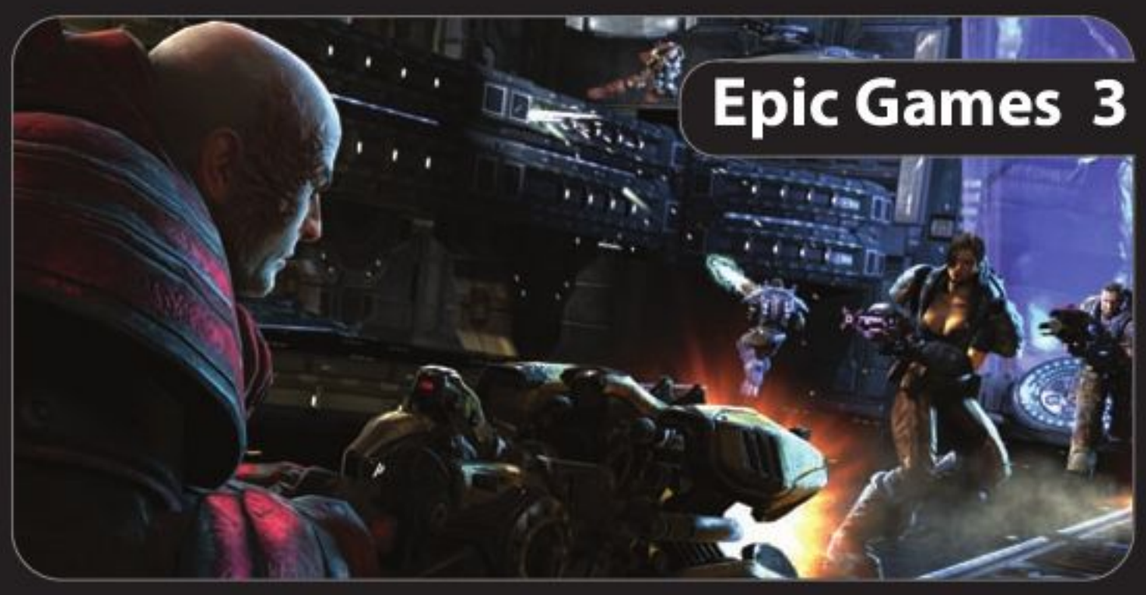
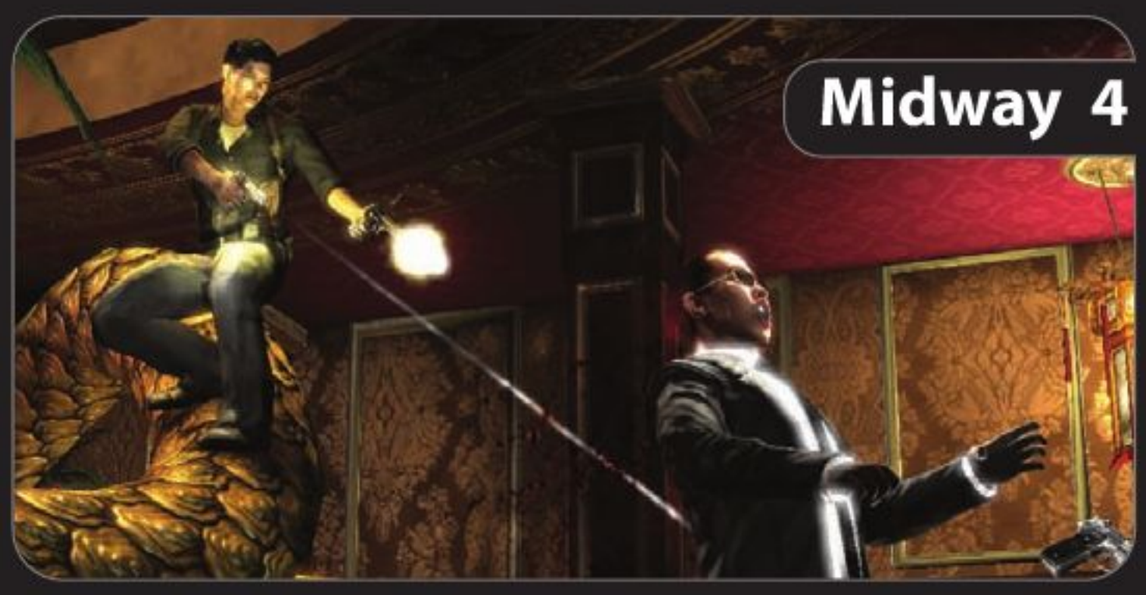
www.autodesk.com


Epic Games 3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Industry leading tools for games developers

Autodesk 3ds Max 2008
The tool of choice for out-of-the-box productivity in 3D rendering and modelling includes enhancements in animation and Biped, rendering, UI and usability.

Autodesk Maya 2008
A powerful solution for a high level of workflow and pipeline control, optimised for multi-core and 64-bit processors, and including the nCloth module.

Autodesk MotionBuilder 7.5
Boasting real-time tools that let you take on the most demanding, animation-intensive projects with a unique real-time architecture for creating state-of-the-art visuals.

Autodesk HumanIK
Run-time middleware that provides dynamic inverse kinematics for natural-looking character animation that can be directly integrated into game engines.

Epic Games

In just the space of three generations, games developers have gone from creating and managing characters made of just a few thousand polygons to characters that consist of over two million.

No one understands that better than Epic Games which has – via recent title *Gears of War*, upcoming game *Unreal Tournament 3*, and its widely used Unreal Engine 3 – pushed the boundaries of games both visually and technologically. And its innovations have in turn helped other developers via its collaboration with Autodesk.

Epic and Autodesk have had a close relationship that goes beyond the usual vendor-client one; the studio has specifically requested and devised features which artists at other companies now take for granted. Normal-mapping in 3ds Max 7 and unwrap in 3ds Max 8 are just two of the key features devised in collaboration with Epic which have since been rolled out across the software for other developers to utilise.

In fact, Epic's whole art pipeline uses 3ds Max as its hub with third party apps plugged in. According to character artist Chris Wells this "gives the best and fastest results" which is key as the pressure on artists to deliver eye-catching visuals is immense, he says.

"Consumers are expecting much more now," he says, adding: "Autodesk tools ensure the studio can focus on the company's core art tenets, which are to make great materials for our game, and show off what our tech can do."

Meanwhile, the studio uses MotionBuilder with its in-house motion capture rig to help build its widely-recognisable characters who are larger-than-life, but nevertheless realistic.

The result, says Wells, is use of a tool which "really frees us up to make the best character possible".

www.epicgames.com

Midway

When you're a long-time established name like Midway, it's important to make sure your teams are using tools that will consistently enable them to live up to the brand.

Indeed, Midway's relationship with Autodesk products has been a fruitful one for over a decade, which now sees almost all of its 250 art staff using multiple Autodesk products.

3ds Max, Maya and MotionBuilder are the studio's tools of choice, explains Martin Murphy, director of art: "We are big fans of letting our artists use the tool they need to make the best art they can."

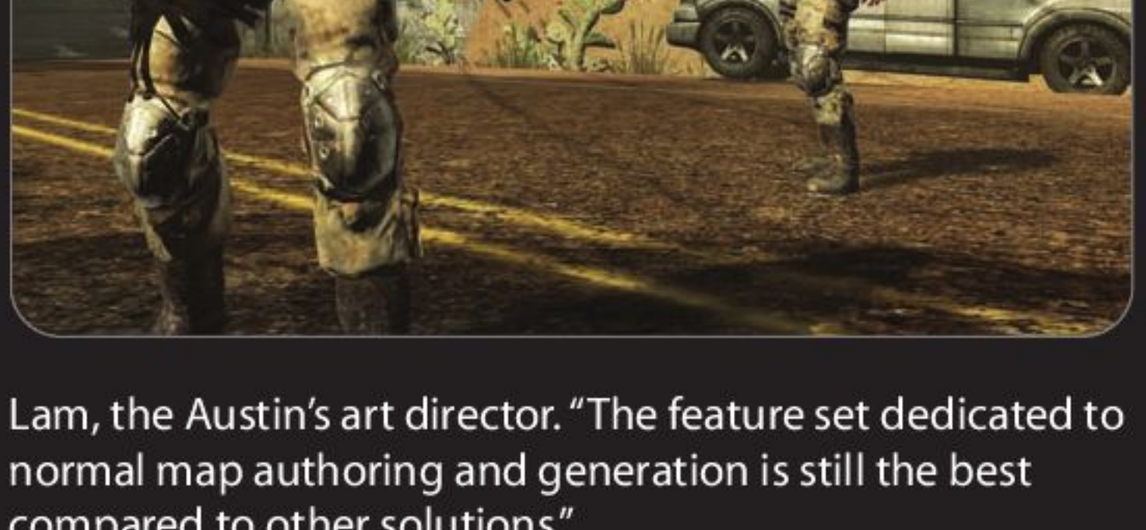
Most of the artists working at Midway Chicago creating assets for *Stranglehold*, the company's collaboration with celebrated film maker John Woo, are familiar with all of those products.

"For *Stranglehold*, during pre-production it was essential that we evaluate every aspect of our pipeline," explains the game's art director, Jason Kaehler.

"It was clear to us that the Autodesk toolset would provide the flexibility, depth and feature-set we needed."

And for a fast-paced martial arts game, there was only one choice when it comes to smoothly implementing intensive character animation, says Kaehler: "Having in-house mocap capabilities mean huge volumes of data. *Stranglehold* has over 6,000 moves that must fit together seamlessly. MotionBuilder offers us a soup-to-nuts solution that we couldn't live without."

Meanwhile at Midway Austin, the team working on *Area 51: Blacksite* are similarly enthusiastic about 3ds Max's extensibility: "3ds Max has been an indispensable tool for next-gen art creation on *Area 51: Blacksite*," explains Cyrus Lam, the Austin's art director. "The feature set dedicated to normal map authoring and generation is still the best compared to other solutions."



He adds: " The extensibility of the software allows our studio to write plug-ins as well as Maxscripts to really integrate 3ds Max into our asset creation pipeline for use in the Unreal Engine 3.

"We've also chosen to use 3ds Max's character studio as our motion capture import path to Unreal Engine 3. Having our library of motion capture moves in character studio gives us the re-targeting flexibility we need to re-purpose mocap for anything from pre-production R&D character tests to actual in-game animations. "

Midway is keen to talk up the benefits of the close relationship it has with Autodesk, particularly when it comes to how willingly the company listens to its customers when introducing new features.

"Our voice was really heard in the skinning tools and vertex lighting tools that came about in 3ds Max," enthuses Murphy, looking back at the close bond that has grown between Autodesk and Midway.

"We use Autodesk products on almost every title we publish," adds Murphy. 3ds Max, Maya and MotionBuilder will be key to other upcoming Midway productions including Vin Diesel-starring action-adventure *The Wheelman* and wrestling title *TNA*.

"When we put in the time and effort to supply Autodesk with the right information to clarify the improvements we seek, we have found Autodesk eager to respond to our needs."

www.midway.com

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CITY LIMITS

Blitz Games

At Leamington Spa, UK-based Blitz Games it's Maya that forms a key part of the studio's in-house tool pipeline.

55 out of the company's 65 artists use the software, which has been used for the production of all Blitz's recent titles, including recent *SpongeBob Squarepants*, *Burger King*, *Reservoir Dogs* and *Bratz* based games. And such an eclectic mix of games demands a versatile and flexible art tool that aids productivity.

"We have our own proprietary engine but the base assets for our games come from Maya. We use this package above others because of its power," explains R&D art manager Aaron Allport.

"The first thing that springs to mind are the workflow advantages," he comments when asked how Autodesk's products have helped the team.

"The marking menu system allows artists to gesture commands at such a speed that we can model almost as fast as thinking about what we are creating. Also important to mention is the open nature of Maya's scripting tool MEL for our bespoke tool creation and with it the great community Maya has allow great tools, such as NEX by Digital Raster, to become part of the pipeline."

As the studio embarks on its biggest next-gen project ever – the studio headcount just shot past the 200-mark – Blitz is gearing up to make the most of what Maya (and MotionBuilder, which the studio also uses) can offer.

And Autodesk has been key to helping the studio prepare, says Allport.

He explains: "Our relationship with Autodesk is really good and getting even better as we grow. We have great contacts in both the UK and Canada that are willing to help us when we need it. We also use the technical support through our Platinum membership and in my opinion it works very well; this is something we have only recently started using on a regular basis and the Autodesk tech guys are fast to respond and offer very good support."

www.blitzgames.com

Electronic Arts

With the world's largest games development resource, Electronic Arts' network of in-house studios spreads across North America, Europe and Asia.

Likewise, EA's resource of tools and its list of technology partners is similarly vast, as is its army of in-house designers and animators.

One of the most interesting developments of late has been how that huge creative workforce has been harnessing Autodesk's HumanIK middleware in new games.

A customised development library designed to support and create realistic character animation and behaviour, the HumanIK middleware has been used, complemented by Maya and MotionBuilder, for the development of EA Chicago's *Def Jam: Icon* and EA Canada's *FIFA Soccer 07* and *NBA Street Homecourt* games.

HumanIK works by providing an inverse kinematics system that lets game developers control the animation of a character's body and limbs at run-time, not only helping create a realistic experience for the player, but a useful one for the developer; the WYSIWG workflow means less time spent fiddling and switching between applications and more time actually creating and developing.

Plus, the technology is designed to be integrated into existing animation engines, complements other third-party middleware products, and is optimised for PlayStation 3, Xbox 360, PC, Mac and PlayStation 2.

"With HumanIK, the character behaviours we created remained intact when exported to the video game engine," explains Glenn Entis, chief visual and technical officer at Electronic Arts.

"That was a huge benefit; it eliminated the usual time-consuming and costly tweaking and toggling between the development software and the game engine. Autodesk HumanIK is the ideal solution for our next-generation game development."

www.ea.com

Autodesk

Autodesk is focused on developing state-of-the-art tools that help designers realise their creative ideas. Its products 3ds Max, Maya, and MotionBuilder represent the broadest set of solutions and streamlined workflow available on the market today.

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Profiling games development's cutting-edge tools and studios

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